

## REMARKS

### Amendments

5           In the specification, page 9 has been amended to recite explicitly the oils referred to at column 3, line 37, to column 4, line 4, of U.S. Patent No. 5, 736,125, to which the application as filed directs the reader for disclosure of suitable oils. Basis for this amendment will be found in that passage in U.S. Patent No. 5,736,125. U.S. Patent No. 5,736,125 is of record, but for the Examiner's convenience, a copy of the relevant page  
10 is attached.

          The independent claims rejected in the Office Action, Claims 7 and 10, have been amended to state that the SCC polymer is present in amount such that it thickens the oil. The significance of this requirement will be made clear below in the discussion of  
15 the rejections under 35 U.S.C. 102 and 103.

          Claim 5, which the Examiner found to be allowable, has been rewritten in independent form, but omitting the feature that the SCC polymer contains at least 80% of units containing a linear polymethylene side chain containing 10 to 50 carbon atoms.  
20 This feature has been omitted from Claim 5 because it seems almost certain that the Examiner found Claim 5 not to be obvious because of the requirement that the composition contains at least 3% of the SCC polymer. The feature omitted from Claim 5 now appears in new Claim 27 (which is dependent on Claim 5), but has been changed (in order to overcome the Examiner's objection under 37 CFR 1.75) to state that the  
25 range of carbon atoms is 14-50, as disclosed on page 6, lines 28-29.

          New claims 21-27 have been added.

          New claim 21 is an independent Claim which is similar to previous Claim 10, but  
30 requires that the oil in the composition is selected from the group consisting of mineral oils; vaseline oils; hydrogenated polyisobutylene; triglycerides; oily esters derived from a

long-chain acid or a long-chain alcohol or both; animal oils; silicone oils; long chain alcohols; esters derived from lanolic acid; and acetyl glycerides. Basis for this amendment is on page 10, lines 23-25, which notes that "suitable oils are disclosed for example at column 3, lines 37, to column 4, line 4, of U.S. Patent No. 5,736,125". U.S.

5 Patent No. 5,736,125 is of record, but for the Examiner's convenience, a copy of the relevant page that Patent is attached. The specification has been amended to provide a counterpart for Claim 21.

10 New claims 22-26 are dependent on claim 21. Basis for claims 22-24 is in claims 12-14. Basis for claims 25-26 is on page 7, line 1.

New Claim 27 is dependent on claim 5, and as noted above, basis for it will be found in Claim 5 prior to the requested amendment, coupled with the disclosure on page 6, lines 28-29.

15

#### The Rejections under 35 U.S.C. 102 and 35 U.S.C. 103

Applicants respectfully traverse the rejection of claims 2,7, 8, 10 and 12-14 under 35 U.S.C. 102 as anticipated by, or under 35 U.S.C. 103 as obvious over, Mueller (U.S. Patent No. 5,281,329), insofar as the rejection is applicable to the amended claims, for following reasons.

Mueller relates to the treatment of an oil which is a crude oil, vacuum gas oil or residual oil. Such oils contain substantial quantities of paraffins. The paraffins dissolve in the oil at higher temperatures, but crystallize out on cooling, thus lowering or preventing the ability of the oils to flow at low temperatures. In Mueller's Examples, the oils have pour points of 6-30 °C. (the pour point is the temperature below which the oil will not flow). Mueller's objective is to reduce the pour point of the oil. He does this by dissolving into the oil an additive which is a mixture of a relatively low melting SCC polymer and a relatively high melting SCC polymer. The quantity of the additive is very small. A range of 1-10,000 ppm (0.001-1%) is given, with a preferred range of 0.005-

0.2%. In the Examples, the amounts used are 4-1,000 ppm (0.004-0.1%). According to Mueller, the additive is "incorporated in the growing paraffin crystals and in this way hinders the further growth of the crystals and the formation of extended crystal conglomerates" (column 1, lines 26-30). Mueller does not disclose any compositions containing water.

From this summary of Mueller, it will be apparent that Mueller's objective is the very reverse of Applicants' objective. Mueller takes an oil that is thick and makes it fluid. Applicants take an oil that is fluid and make it thick.

In its broadest aspects, this invention includes compositions which comprise (i) a paraffin-containing oil as specified by Mueller, and (ii) a mixture of SCC polymers as specified by Mueller. However, the amendments made to the claims make it clear that even Applicants' broadest claims do not include anything disclosed by Mueller. Thus, the requirement that the SCC polymer is used "in amount such that it thickens the oil" clearly excludes everything disclosed by Mueller, whose sole purpose is to make the oil more fluid.

A comparison of Mueller and the present application makes it clear that Applicants use substantially greater quantities of the SCC polymer than Mueller, and that, in consequence, Applicants achieve a result which is the opposite of that achieved by Mueller. For example, the minimum amount of SCC polymer explicitly disclosed in this application is 3%, i.e. 3 times the maximum disclosed by Mueller and 30 times the maximum amount used in any of Mueller's specific examples. Page 9, lines 12-14, notes that it is "usually unnecessary" to use more than 10 % of the SCC polymer and that "smaller amounts such as 3 to 7%, for example about 5%, are often effective". Applicants' Examples use 5 % of the SCC polymer. Those skilled in the art will have no difficulty, having regard to their own knowledge and the disclosure in this application, in selecting SCC polymers and amounts thereof which will achieve the desired result of thickening the oil.

The Examiner's comment that "All properties are inherent in the composition" (i.e. the composition disclosed in Mueller) is of course correct in relation to a claim to a composition in which the relative amounts of the oil and the SCC polymer are not specified. However, it is not correct in relation to the amended claims, in which the proportions of the oil and the SCC polymer are functionally limited in a way that is directly contrary to Mueller's mandatory requirements.

It is submitted, therefore, that the rejection under 35 U.S.C. 102 must be withdrawn, since Mueller nowhere discloses a composition in which the presence of the SCC polymer results in thickening of the oil. It is further submitted that, since Mueller's sole objective is to provide a composition in which the SCC polymer **increases** the pourability of the oil, the rejection under 35 U.S.C. 103 should also be withdrawn, since it cannot be obvious to modify Mueller in a way that is directly contrary to Mueller's instructions, i.e. so as to **decrease** the pourability of the oil.

The Examiner has already noted that a number of the claims originally filed (namely claims 3, 5, 9, 11, and 17-20, which the Examiner allowed or merely objected to) contain limitations that provide a clear distinction over Mueller. New independent claim 21 likewise contains a limitation that provides a clear, additional, non-functional, distinction over Mueller. Applicants contend, therefore, that claim 21 is independently patentable, even if claims 7 and 10 are not patentable.

### CONCLUSION

It is believed that this application is now in condition for allowance, and such action at an early date is earnestly requested. If, however, there are any outstanding issues that could usefully be discussed by telephone, the Examiner is asked to call the undersigned.

Respectfully submitted,

T. H. P. Richardson, Registration No.28,805,

Tel No. 650 854 630



Docket No. 12969

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Bitler

Group Art Unit: 1714

Serial No.: 09/398,377

Examiner: Szekely, P.

5 Filing Date: 09/17/99

Title: Polymeric Thickeners for Oil-Containing Compositions

**VERSION OF AMENDED PARAGRAPH OF THE SPECIFICATION WITH  
MARKINGS TO SHOW CHANGES REQUESTED BY THE ACCOMPANYING  
REPLY, FILED IN ACCORDANCE WITH 37 CFR 1.121(b)(1) AND (2).**

10 This paper sets out a version of the paragraph rewritten as requested  
by the accompanying Reply, marked up to show all the changes relative to the previous  
version of the paragraph. In this version, the changes are shown by brackets (for  
deleted matter) and underlining (for added matter).

15 The paragraph beginning on page 10, line 22 (with the words "The new polymeric  
thickeners.....") and ending on page 10, line 27 (with the words "..... WO 00/04787.")  
has been rewritten to incorporate the changes shown below

-- The new polymeric thickeners are effective with a broad range of oils. Suitable  
20 oils include mineral oils; vaseline oils; hydrogenated polyisobutylene; triglycerides; oily  
esters derived from a long-chain acid or a long-chain alcohol or both; animal oils;  
silicone oils; long chain alcohols; esters derived from lanolic acid; and acetyl glycerides,  
as disclosed [are disclosed, for example,] at column 3, line 37, to column 4, line 4, of  
U.S. Patent No. 5,736,125 and elsewhere in the documents incorporated by reference  
25 herein. --

Respectfully submitted,

T. H. P. Richardson, Registration No.28,805,

Tel No. 650 854 630

**CERTIFICATE OF MAILING UNDER 37 CFR 1.8**

I hereby certify that this correspondence is being deposited with United States Postal Service with sufficient postage as first-class  
mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231  
On February 28, 2002

Typed name of person signing this certificate: T. H. P. Richardson

Signature



Docket No. 12969

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

5

Applicant: Bitler

Group Art Unit: 1714

Serial No.: 09/398,377

Examiner: Szekely, P.

Filing Date: 09/17/99

Title: Polymeric Thickeners for Oil-Containing Compositions

10

**VERSION OF AMENDED CLAIMS WITH MARKINGS TO SHOW  
CHANGES REQUESTED BY THE ACCOMPANYING REPLY, FILED IN  
ACCORDANCE WITH 37 CFR 1.121(c)(1)(ii).**

15

This paper sets out a version of each of the claims rewritten as requested by the accompanying Reply (but not the claims which were unchanged or which were canceled or added by the Reply), marked up to show all the changes relative to the previous version of the claim. In this version,

20

- (i) a parenthetical expression (which is the same as the parenthetical expression in the clean version of claims set out in the Reply) follows the claim number and indicates the status of the claim as amended, and
- (ii) the changes are shown by brackets (for deleted matter) and underlining (for added matter).

**CERTIFICATE OF MAILING UNDER 37 CFR 1.8**

I hereby certify that this correspondence is being deposited with United States Postal Service with sufficient postage as first-class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231  
On February 28, 2002

Typed name of person signing this certificate: T. H. P. Richardson

Signature

5. (Amended) A thickened oil composition [according to Claim 10, wherein the SCC polymer is present in amount] comprising

(1) an oil, and

(2) dispersed in the oil, at least 3% by weight [and contains at least 80% by weight of repeating units containing a side chain comprising a linear polymethylene radical containing 10 to 50 carbon atoms] of a polymer which

(a) has a crystalline melting point,  $T_p$ , and an onset of melting temperature,  $T_o$ , such that  $T_p - T_o$  is less than  $T_p^{0.7}$ ;

(b) is soluble in the oil at temperatures above  $T_p$ ,

(c) has been dispersed in the oil by a process which comprises

(i) dissolving the polymer in the oil at a temperature above  $T_p$ , and

(ii) cooling the solution to crystallize the polymer in the oil, and

(d) is a side chain crystalline (SCC) polymer which is substantially free of functional groups, and which consists of

(i) 50 to 100% by weight of units derived from at least one

n-alkyl acrylate or methacrylate in which the n-alkyl group contains 12 to 50 carbon atoms, and

(ii) less than 50% by weight of units derived from at least one

alkyl acrylate or methacrylate in which the alkyl group is not an n-alkyl group containing 12 to 50 carbon atoms;

the composition being at a temperature below  $T_p$ .

7. (Amended) A thickened oil composition which comprises

(1) an oil, and

(3) dispersed in the oil, a polymer which

(a) has a crystalline melting point,  $T_p$ , and an onset of melting temperature,  $T_o$ , such that  $T_p - T_o$  is less than  $T_p^{0.7}$ ;

(b) is soluble in the oil at temperatures above  $T_p$ ,

(d) has been dispersed in the oil by a process which comprises

(i) dissolving the polymer in the oil at a temperature above  $T_p$ , and

(ii) cooling the solution to crystallize the polymer in the oil, [and ]

(e) is a side chain crystalline (SCC) homopolymer which is substantially free of functional groups, and

(f) is present in amount such that it thickens the oil;

5 the composition being at a temperature below  $T_p$ .

10. (Four times amended) A thickened oil composition comprising

(1) an oil, and

(3) dispersed in the oil, a polymer which

10 (a) has a crystalline melting point,  $T_p$ , and an onset of melting temperature,  $T_o$ , such that  $T_p - T_o$  is less than  $T_p^{0.7}$ ;

(b) is soluble in the oil at temperatures above  $T_p$ ,

(c) has been dispersed in the oil by a process which comprises

15 (i) dissolving the polymer in the oil at a temperature above  $T_p$ , and

(ii) cooling the solution to crystallize the polymer in the oil,

[and ]

(d) is a side chain crystalline (SCC) polymer which is substantially free of functional groups, and which consists of

20 (i) 50 to 100% by weight of units derived from at least one n-alkyl acrylate or methacrylate in which the n-alkyl group contains 12 to 50 carbon atoms, and

(ii) less than 50% by weight of units derived from at least one alkyl acrylate or methacrylate in which the alkyl group is not an n-alkyl group containing 12 to 50 carbon atoms, and

25 (e) is present in amount such that it thickens the oil;

the composition being at a temperature below  $T_p$ .

30 

Respectfully submitted,

T. H. P. Richardson, Registration No.28,805,

Tel No. 650 854 6304